D20

App. F IX-4

Previous References.
117-40-163

(1940-1 War)

War File No. 116-40
Serial Nos. 1 to 4

Later References.

GENERAL AND REVENUE SECRETARIAT.

Serial Nos. Four only

Part B for December 1941

SUBJECT.

Estimated heavy-plant requirements in public electricity-supply undertakings in Indian States

J.M. Krishnan.
11.12.41.

3707/W

Estimates heavy plant requirements in public electricity supply undertakings in Indian States

General and Revenue Secretariat

W File No. 116 of 1940-1 [App. F. III-2

Serial No.	
1	From The Secy to the Hon'ble the Revenue Member F. 65-41/W dated 25th July 41 requesting to send the required information direct to the Elect. Commr with 2 copies to the Secy. The information required is as regards the probable requirements for any imported plant in the category mentioned in the Elect. Commr's letter for which the principal electrical undertakings in India are likely to place orders before the end of 1941. The file may be perused by the Elect. Supdt also. Submd for perusal with a draft to the C.E.E. requesting to furnish the desired information.
	For perusal.
	Law Minister / Pers. Secy / Elect. Supdt
	28.7.41
	28/7
	29-7-41
	29.7.41
	30/7
2	Issued No. 449/W dated 30th July '41 to the C.E.E.
3	From JE / Electrical Asstt. 8905-10 dated 28th Oct. 41 forwarding copies of lists sent to the Elect. Commr.
	Submd for perusal with a reply to the Revenue Secy forwarding 2 copies of the lists as desired in their letter of 25th July 41
	29/10

ELECTRICAL SECRETARIAT BANGALORE. Dy. No. 215 Dt. 28-7-41

D. 1743. 29-7-41.

OFFICE OF THE MINISTER FOR LAW JUL 29 1941 No. 926.

NOTE—Contn. Sheet

Estimates heavy plant requirements in public electricity supply undertakings in Indian States

File No. 116 of 194

General and Revenue Secretariat

Serial No.

Appd.
Issue after perusal by Sec'y States Deptt.

30/10/41

Secl. Genl. Deptt.

30/10

Ch. Sec.

30/10

Issued P.L. 770 & 31st Ch. Al to the Rly. Bd

B

W 116-40-1

The reply to this communication should be addressed to the Secretary to the Resident in Mysore, Bangalore, by designation and not by name.

No. F 65-41/41

370/41

Pol. 180

FROM

THE SECRETARY TO THE HON'BLE THE RESIDENT IN MYSORE.

To

The Chief Secretary to the Government of
His Highness the Maharaja of Mysore, Bangalore.

CHIEF SECRETARY 26 JUL. 1941 GOVT. OF MYSORE.

Dated Bangalore, the 25th July 1941.

Estimated heavy plant requirements in public electricity supply undertakings in Indian States.

SIR,

I am directed to state that, as the requirements of public electricity supply undertakings in respect of heavy imported plant involve the use of certain manufacturing processes and equipment which are almost entirely involved in the production of heavy munitions of war - for example, the manufacture of a steam turbo-alternator would require forging presses and similar equipment which might otherwise be used for producing guns or armour plate -, it has been considered necessary by the Government of India to estimate the total requirements of imported plant in order that the India Office may be informed of the extent to which priority facilities for manufacturing and supplying the machinery in question may have to be arranged for. With this object in view, all the principal public electric supply undertakings in British India have been addressed as in the letter from the Electrical Commissioner with the Government of India, No.EL.C.25/, dated the 9th July 1941 of which a copy is enclosed.

2. The Government of India state that it would make for convenience to all concerned if such of the Indian States as have substantial government-owned electrical undertakings would kindly co-operate in the matter by providing similar information. I am accordingly to request that, if there is no objection, the

Government

Government of Mysore will be so good as to collect the required information in respect of their electrical undertakings and send the information direct to the Electrical Commissioner with the Government of India (6, Esplanade East, Calcutta) with two copies to this Residency.

I have the honour to be,
Sir,
Your most obedient servant,

R Macaire.

SECRETARY TO THE RESIDENT.

VN

Copy of a letter from the Electrical Commissioner with the Government of India, Department of Supply, No.El.C.25/, dated the 9th July 1941.

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ANTICIPATED REQUIREMENTS OF HEAVY PLANT DURING 1941 -

As you are no doubt well aware the import of heavy plant and equipment from overseas for public electricity supply undertakings is a matter of considerable difficulty. The Government of India are anxious to avoid the imposition of non-essential manufacturing activity on the United Kingdom where this activity involves the use of certain classes of manufacturing plant which might otherwise be employed on the production of the most vital munitions of war. This general statement also covers the placing of any unnecessary burden on the United Kingdom's industry involving the use of certain materials. It will be clear that public electricity supply undertakings required several classes of apparatus which fall in the above categories.

The categories of particular importance are : -

(a) turbo alternators,
(b) water wheels and alternators,
(c) diesel engines,
(d) high pressure steam pipework,
(e) boiler drums,
(f) boiler tubes,
(g) mechanical stokers,
(h) forged or cast steel steam fittings,
(i) mechanical draft plant,
(j) large circulating water pumps,
(k) high pressure pumps,
(l) high voltage switchgear,
(m) transformers,
(n) large motors,
(o) insulated cables,
(p) bare conductors,
(q) mercury arc rectifiers.

2. I am addressing this letter to all the principal undertakings in India and requesting them to give immediate consideration to their probable requirements for any imported plant in each of the above categories for which they are likely to place orders before the end of 1941. Accordingly I should be grateful if you would assist by giving this matter your most earnest attention and reply to this letter, as soon as possible, giving a condensed summary of this information for your undertaking. In referring to power station plant your statement should indicate in which station the plant will be installed.

3. I am of course aware of the general plant position in your undertaking, but it is essential that I should ask you to prepare this statement as I cannot expect to be fully informed of your probable requirements, without your assistance.

4. I would particularly request that your list of probable requirements should be on the assumption that you will have to put up with some degree of inconvenience due to the limited quantity of equipment for which it will be possible to arrange import and manufacturing facilities overseas. That is to say I must appeal to you to play your part by keeping your requirements at as low a level as possible. In this connection I would draw your attention to the following notes: -

(a) It is extremely desirable to maintain in serviceable condition any heavy plant which you already have and which is capable of doing its work. Accordingly the temptation to order entirely new machines for replacement should be resisted wherever possible, your request being limited to the ordering of replace parts.

(b) You should indicate where you would propose to order certain items of equipment other than from the United Kingdom, i.e., from the United States, Canada or Australia, explaining the reasons.

(c) You should explore every avenue for obtaining your requirements in India before including certain items in your statement. In this connection I would remind you of the substantial advance which has taken place in India's manufacturing resources in the last 12 months. That this is not fully appreciated is apparent from the number of cases in which the Department of Supply is asked for priority facilities on imported equipment which is already being manufactured in India.

(d) In considering the scale of your probable requirements between now and the end of 1941 you may reasonably assume that the position for the importation of such equipment during the year 1942 will be about the same as it is now. It is probable that you will accordingly be asked for another similar statement in respect of 1942 orders at the end of this year.

(e) If your undertaking has already been addressed by this office in connection with the taking of any air raid precautionary measures (but not otherwise) you should make it clear to what extent you are proposing to place orders in order to maintain an adequate scale of reserve transformers, distribution switchgear and cabling.

(f) You should seriously consider whether you can avoid altogether the purchase of armoured cable and accept unarmoured cable in its place for the duration of the war.

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Appendix F G—1]

SUBJECT.....

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Diary No. of letter replied to.....

General and Revenue Secretariat

( )

the *19*

Date of issue 30.7.41

Signed by Mr. C.S.R.

List of enclosures.....

Copied by .....

Examined by .....

Section W

File No. 116-40

Serial No. 2

No. 449/W

To Ernest

The Chief Elect. Engr.

Sir, Estimates heavy plant requirements in public electricity supply undertakings in Indian States.

I am directed to enclose herein for information a copy of Resy letter No F.65-41/41 dt 25th June-41 with its enclosure on the above subject and to request you to kindly furnish the required information in respect of the electrical undertakings directly to the Elect. Commr with the Govt of India and three copies for to this office transmission to the Resy Dept and for the information of Govt

I have the

28/7/41

Chief Secretary

WD 086—GPB—40,000—30-7-40

No 449/W
Ernest

29th July 1941.

The Chief Electrical Engineer in Mysore.

Estimated heavy plant requirements in public electricity supply undertakings in Indian States.

- - - - -

I am directed to enclose herein for information a copy of Residency letter No.F.65-41/W dated the 25th July 1941 with its enclosure on the above subject and to request you to kindly furnish the required information in respect of the electrical undertakings direct to the Electrical Commissioner with the Government of India and three copies to this office for transmission to the Residency and for the information of Government.

I have the honour to be,

Sir,

Your most obedient servant,

For Chief Secretary to Government.

Letter No.F.65-41/W dated the 25th July 1941 from the Secretary to the Hon'ble the Resident in Mysore.

- - - -

Estimated heavy plant requirements in public electricity supply undertakings in Indian States.

- - - - -

I am directed to state that, as the requirements of public electricity supply undertakings in respect of heavy imported plant involve the use of certain manufacturing processes and equipment which are almost entirely involved in the production of heavy munitions of war - for example, the manufacture of a steam turbo-alternative would require forging presses and similar equipment which might otherwise be used for producing guns or armour plate -, it has been considered necessary by the Government of India to estimate the total requirements of imported plant in order that the India Office may be informed of the extent to which priority facilities for manufacturing and supplying the machinery in question may have to be arranged for. With this object in view, all the principal public electric supply undertakings in British India have been addressed as in the letter from the Electrical Commissioner with the Government of India, No.EL.C.25/, dated the 9th July 1941 of which a copy is enclosed.

2. The Government of India state that it would make for convenience to all concerned if such of the Indian States as have substantial government-owned electrical undertakings would kindly co-operate in the matter by providing similar information. I am accordingly to request that, if there is no objection, the Government of Mysore will be so good as to collect the required information in respect of their electrical undertakings and send the

information direct to the Electrical Commissioner with the Government of India (6, Esplanade East, Calcutta) with two copies to this Residency.

Letter from the Electrical Commissioner with the Government of India, Department of Supply, No.El.C.25/, dated the 9th July 1941.

- - - -

Anticipated requirements of heavy plant during 1941.

- -

As you are no doubt well aware the import of heavy plant and equipment from overseas for public electricity supply undertakings is a matter of considerable difficulty. The Government of India are anxious to avoid the imposition of non-essential manufacturing activity on the United Kingdom where this activity involves the use of certain classes of manufacturing plant which might otherwise be employed on the production of the most vital munitions of war. This general statement also covers the placing of any unnecessary burden on the United Kingdom's industry involving the use of certain materials. It will be clear that public electricity supply undertakings required several classes of apparatus which fall in the above categories.

The categories of particular importance are:-

(a) turbo alternators,
(b) water wheels and alternators,
(c) diesel engines,
(d) high pressure steam pipework,
(e) boiler drums,
(f) boiler tubes,
(g) mechanical stokers,
(h) forged or cast steel steam fittings,

(i) mechanical draft plant,
(j) large circulating water pumps,
(k) high pressure pumps,
(l) high voltage switchgear,
(m) transformers,
(n) large motors,
(o) insulated cables,
(p) bare conductors,
(p) mercury arc rectifiers.

2. I am addressing this letter to all the principal undertakings in India and requesting them to give immediate consideration to their probable requirements for any imported plant in each of the above categories for which they are likely to place orders before the end of 1941. Accordingly I should be grateful if you would assist by giving this matter your most earnest attention and reply to this letter, as soon as possible, giving a condensed summary of this information for your undertaking. In referring to power station plant your statement should indicate in which station the plant will be installed.

3. I am of course aware of the general plant position in your undertaking, but it is essential that I should ask you to prepare this statement as I cannot expect to be fully informed of your probable requirements, without your assistance.

4. I would particularly request that your list of probable requirements should be on the assumption that you will have to put up with some degree of inconvenience due to the limited quantity of equipment for which it will be possible to arrange import and manufacturing facilities overseas. That is to say I must appeal to you to play your part by keeping your requirements at as low a level as possible. In this connection I would draw your

attention to the following notes:

(a) It is extremely desirable to maintain in serviceable condition any heavy plant which you already have and which is capable of doing its work. Accordingly the temptation to order entirely new machines for replacement should be resisted wherever possible, your request being limited to the ordering of replace parts.

(b) You should indicate where you would propose to order certain items of equipment other than ~~kk~~ from the United Kingdom, i.e., from the United States, Canada or Australia, explaining the reasons.

(c) You should explore every avenue for obtaining your requirements in India before including certain items in your statement. In this connection I would remind you of the substantial advance which has taken place in India's manufacturing resources in the last 12 months. That this is not fully appreciated is apparent from the number of cases in which the Department of Supply is asked for priority facilities on imported equipment which is already being manufactured in India.

(d) In considering the scale of your probable requirements between now and the end of 1941 you may reasonably assume that the position for the importation of such equipment during the year 1942 will be about the same as it is now. It is probable that you will accordingly be asked for another similar statement in respect of 1942 orders at the end of this year.

(e) If your undertaking has already been addressed by this office in connection with the taking of any air raid precautionary measures (but not otherwise) you should make it clear to what extent you are proposing to place orders in order to maintain an adequate scale of reserve transformers, distribution switchgear and cabling.

(f) You should seriously consider whether you can avoid altogether the purchase of armoured cable and accept unarmoured cable in its place for the duration of the war.

"C O P Y"

For Chief Secretary to Government.

W 116-40-3.

Telephone No. 2110

IN REPLY REFER TO
No. 8909 —10.
ENCLO.

Telegraphic Address:
"GOMED"

CODES USED
BENTLEY'S, LIEBER'S
A. B. C. 6TH EDITION.
BUSINESS TELEGRAPHIC CODE

GOVERNMENT OF MYSORE

ELECTRICAL DEPARTMENT

Electrical Advisor
OFFICE OF THE ~~CHIEF ELECTRICAL ENGINEER~~,
to the Government of Mysore
Bangalore, 25th October *1941*
(MYSORE, S. INDIA.)

From

S. G. FORBES, ESQ., E.E., B.Sc., E. & M.E., MEM. A.I.E.E.,
~~CHIEF ELECTRICAL ENGINEER~~ Electrical Advisor
TO THE GOVERNMENT OF MYSORE.

To

BANGALORE.

The Electrical Commissioner
with the Government of India,
Calcutta.

Sir,

I have been directed by Mysore Government to send you direct the information asked for in your letter No.El.C.25 dated the 9th July 1941 received by Mysore Government through the Hon.'ble the British Resident in Mysore and I have the honor to enclose herewith two lists of materials for which we hope to be able to place orders before the end of the year 1941.

I have the honor to be,
Sir,
Your most obedient servant,

Electrical Advisor
to the Government of Mysore.

CHIEF SECRETARY
SGT.PRN
29. OCT. 1941
GOVT. OF MYSORE.

Copy forwarded, with compliments, to the Chief Secretary to Government, Bangalore, with 3 copies of the lists as desired in his No.449/W dated the 30th July 1941.

Electrical Advisor
to the Government of Mysore

Encls: 3 Sets of 4 lists.

GOVERNMENT OF MYSORE. ELECTRICAL DEPARTMENT.

List No.1.

MYSORE - BHADRAVATI TRANSMISSION LINE - SECOND CIRCUIT.

List of Transmission Line Materials

Sl. No.	Name of material.	Qty. required for using Baliga Pole Structures 10 spans per M i l e.
		Nos.
1.	Suspension Insulator discs Clevis type 10" diameter.	30,000
2.	Galvd. suspension wire clamps	4,800
3.	Galvd. strain clamps for 266,800 CM. ACSR. cable or 3/0 B&S copper conductor	1,100
4.	Galvd. Forged steel hooks	1,100
5.	Sets of arcing horns for item 2	4,800
6.	Galvd. arcing horns for strain clamps	1,100
7.	Galvd. Clevis fittings	11,800
8.	Galvd. steel links	4,800
9.	Galvd. 'U' bolts for fixing ground wire 5/16" diameter	5,500
10.	Galvd. Crossby clips for 3/8" dia. guy wire	7,000
11.	Aluminium steel reingorced cable with copper equivalent area of 0.1318 Sq.inch 266,800 CM.	500 Mls.
	Alternatively	
11a.	Bare hard-drawn stranded copper conductor 3/0 B. & S.	500 Mls.
12.	Extra Galvd. high strength steel wire for ground wire 5/16" dia	300 Mls.
13.	Bare hard-drawn copper solid No.10 B&S. for Tel.line	300 Mls.
14.	Extra Galvd.Siemens Martin Strand 3/8" overall dia. steel wire	30 Miles.
15.	Compression joint assemblies for jointing the cables under item (11)	1,000
	Alternatively	
15a.	Copper oval twisting sleeves for jointing hard drawn copper conductors 3/0 B&S.	1,000
16.	Hydraulic compressors complete with dies for splicing the cables of item (11) with joints of item (15)	6
17.	Spare dies for the above Hydraulic compressors	6 sets.
18.	Aluminium flat ribbon 0.55"x0.30"	200 Lbs.
19.	Parallel groove clamps made of aluminium for item (11)	100
20.	Parallel groove clamps similar to item 19, but suitable for connecting aluminium cables of item (11) with stranded copper cable 3/0 B&S	50 Nos.

MH:MRA:PM:VBR.

General Superintendent, CP&C

GOVERNMENT OF MYSORE. ELECTRICAL DEPARTMENT.

List No. II.

MYSORE - BHADRAVATI TRANSMISSION LINE - SECOND CIRCUIT.

List of Transformers, Switchgear, etc.

Item No.	Quantity.	Description.
1(a)	FOUR	Single-phase oil immersed water-cooled Transformers 3333 kVA. 132/78-2200/4400 volts Delta, 25/50 cycles complete with oil for the first filling
		alternatively
1(b)	FOUR	Single-phase transformers as above but self-cooled, excepting for the provision of cooling coils. The Transformer banks in this case shall have liberal radiating surface and shall be welded with sufficient radiating tubes of rust resisting steel to provide the required cooling surface.
2.	ONE	Transformer Transfer Truck suitable for handling the transformers specified above.
3.	TWO	Triple-pole, single-throw, Oil Circuit Breakers, 132 KV. 600 amperes, complete with operating mechanism, bushing type current transformers, and potential devices; oil for the first filling etc.
4.	ONE	Triple-pole, single throw, Oil Circuit Breaker, 15000 volts, 4000 amperes, complete with operating mechanism oil for the first filling etc.
5.	TWO	Sets Thyrite Lightning Arresters for 78,000 volts, 3-phase, 25 cycles, solidly earthed neutral system.
6.	SIX	Out-door Disconnecting Switches, 132,000 volts, 600 amperes, single pole, single throw, provided with operating eye for hook operation blade latch and guide 135° stop and arranged for steel structure mounting.
7.	SIX	Disconnecting Switches as in item 6 above, but rated for 132,000 volts, 600 amperes & suitable for indoor service.
8.	TWENTY-SEVEN	Disconnecting switches as in item 7 above but for outdoor service.
9.	THREE	Disconnecting Switches as in item 6 above, but rated for 15,000 volts, 4000 amperes.
10.	TWELVE	Operating poles 16' to 18' long with hooks for operating the disconnecting switches under items 6 to 8.
11.	TWO	Sets group-operated outdoor Air-break horngap switches triple-pole, 132,000 volts, 600 amps. complete with manual operating mechanism, etc. and arranged for steel structure mounting.
12.	FOUR	Compound filled wall-entrance bushings for 132,000 volts.
13.	TWO	Sets of control panels complete with necessary meters, relays, instrument transformers. etc.

Item No.	Quantity.	Description.
14.	2000 Ft.	of Multi-conductor control cables.
15.	5000 Ft.	of varnished cambric insulated power cables of sizes.
16.		Miscellaneous insulated wires and wiring accessories
17.	SIX	Sets of wall Type Magneto Telephones with protective equipment.
18.	TWELVE	Portable Magneto Telephones.

MH:MRA:VBR.

General Superintendent,
Cauvery Power Scheme.
27/10

List No.III

STATEMENT OF FOREIGN MATERIALS ALREADY ORDERED AND TO BE ORDERED BEFORE THE END OF DECEMBER 41.

Sl.No.	Particulars.	Quantity.
1.	2/0 A.W.G.Bare Copper Cable for Hindustan Aircraft Limited.	40 Tons.
2.	No.4 B&S.Bare Copper Wire for Electrification Project of Kadur, Birur & Ajjampur.	69 Miles.
3.	Recording Meters for Shimshapura Generating Station.	2 Nos.
4.	10-ton Overhead Travelling Crane for Shimshapura Generating Station.	1 No.
5.	Distribution Transformers for 1941-42 for Normal Works.	100 Nos.
6.	Rectifier for Telephone Carrier Equipment at Mysore Telephone Exchange.	1 No.
7.	Street Series Lamps for 1941-42 for replacement.	21,500 Nos.
8.	D.C.Armatures for motor-driven Exciters at Sivasamudram Generating Station.	2 Nos.
9.	No.2 B&S.Copper Conductor for increasing the capacity of the conductor on Chickballapur-Goribidnur Transmission Line.	67 Miles.
10.	V.C.Insulated Cables of sizes for 1941-42 for Normal Works.	42,600 Feet.
11.	Copper Cooling Coils for the Transformers at Kankanhalli.	9 Nos.
12.	Energy Meters single & 3-phase of sizes.	2,700 Nos.
13.	General Service Lamps of sizes, Switchboard Indicating Lamps, etc.	9,600 Nos.

General Superintendent,
Cauvery Power Scheme.

MRA-PM-MSSV.

GOVERNMENT OF MYSORE — ELECTRICAL DEPARTMENT

JOG FALLS PROJECT

List of materials and equipment to be purchased before end of December 1941

Item No.		Particulars	Quantity
XIII.	(1)	Trolley Hoist and motor 200 H.P. complete with drums, rope, hoist trolley, switch-gear, etc.	1 Set
	(2)	Workshop equipment of machinery such as lathes, drilling machines, planing machines, grinding machines, carpentry equipment, milling machines, blower for the smithy forge and for the foundry.	
	(5)	Distribution transformers for local power requirements and colony lighting etc. ranging in size from:- 6 of 5 kVA, 6 of 10 kVA, 3 of 25 kVA, 3 of 50 kVA, 3 of 37.5 kVA	

Bangalore
26-10-1941
RP-PRN.

B K Ram Prasad 26/10/41.
General Superintendent,
J.F.P.(Construction)

Appendix F G—1]

SUBJECT.....

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Section W

File No. 116-40

Serial No. 4.

Diary No. of letter replied to.....

No. Pol 770 Encls

To The Secy to the Govt of the Punjab to the Resident in Kashmir & States Agency, Simla.

Estimated heavy plant requirements in public electricity supply undertakings in Indian States.

General and Revenue Secretariat

( )

the *19*

Date of issue 31.10.1941

Signed by Mr. S.K.V

Sir, As desired in Paragraph 2 of your letter no F. 65-41/W 3 25th Sept. 41 on the above subject, I am directed to enclose herein for information two copies of the lists showing the material required in respect of the electrical undertakings in the areas directly by the Electrical Adviser to the Govt of India to the Electl Commissioner with the Govt of India.

List of enclosures.....

Copied by .....

Examined by.....

Chief Secretary to Govt

30/10/41

29/10

31st October 1941.

Lot 720 Encls

The

Estimated heavy plant requirements in public electricity supply undertakings in Indian States.

- - -

As desired in paragraph 2 of your letter No.F.65-41/W dated the 25th July 1941 on the above subject, I am directed to enclose herein for information two copies of the lists sent direct by the Electrical Advisor to this Government to the Electrical Commissioner with the Government of India showing the materials required in respect of the electrical undertakings in the State.

I have the honour to be,

Sir,

Your most obedient servant,

For Chief Secretary to Government.